

ADVERTISEMENT FOR BIDS

**McIntosh Street Storm Sewer Rehabilitation  
for the  
City of Elberton**

Sealed bids will be received by the City of Elberton until **2:00 p.m., Thursday, February 8, 2018** at Elberton City Hall, 203 Elbert Street, Elberton, GA 30635, for furnishing all materials, labor, tools, equipment, and any other miscellaneous items necessary for the McIntosh Street Storm Sewer Rehabilitation for the City of Elberton. Bids shall be marked and labeled as **McIntosh Street Storm Sewer Rehabilitation**. Any bid received after said time and date of bid opening will not be considered by OWNER. Bids will be publicly opened and read aloud at this time and location. All bids will be evaluated by OWNER, and the project will be awarded, if it is awarded, within sixty (60) days of the bid opening.

**The Project consists of, but is not limited to the following major elements:**

Structural rehabilitation of approximately 170 linear feet of 54-inch diameter CMP storm sewer and repair of box culvert floor.

A pre-bid conference is not scheduled for this project. Potential bidders may obtain access to videos of the storm sewer interior by contacting Mr. Kevin Eavenson, Elberton's Public Works Director, by telephone at 706-213-3100 or by e-mail at [keavenson@cityofelberton.net](mailto:keavenson@cityofelberton.net). Potential bidders wishing to tour the storm sewer interior should contact Mr. Eavenson at least 24 hours prior to the date of the intended visit to obtain permission to enter the site.

*Please note that any persons entering the storm sewer do so at their own risk. Neither the City nor its Representatives or Agents are liable for any loss of damage to any visitor or any person's property nor for any injury or death of any visitor whether such loss of damage to property of injury or death is as a result of the negligence of the City and/or its Representatives or Agents or not.*

Time of completion for all work associated with this project shall be FORTY-FIVE (45) consecutive calendar days from the date of a written "Notice to Proceed" from OWNER.

For general information regarding this project, you may call Jim Sunta, Project Manager, Precision Planning, Inc., at 770-267-8800.

A bid bond is not required for this project.

The successful bidder will be required to furnish OWNER with Insurance, Workman's Compensation Insurance, and Performance and Payment Bonds in the amount of one-hundred percent (100%) of the total bid.

OWNER reserves the right to reject any bid based on evaluations and investigations of bidder's quality, workmanship, or adherence to schedule on previous projects. The contract shall be awarded based on the best interest of the OWNER, as determined by the OWNER.

Lanier Dunn, City Manager  
City of Elberton



## **REQUEST FOR BIDS**

**CITY OF ELBERTON**

**McINTOSH STREET STORM SEWER REHABILITATION**

**JANUARY 4, 2018**

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## INSTRUCTIONS TO BIDDERS

### 1 DEFINED TERMS:

- 1.1 The term "Successful Bidder" means the Bidder to whom the OWNER awards or expects to award the contract.

### 2 COPIES OF BID DOCUMENTS:

- 2.1 The Bid Document Package consists of the following items:
- a. This REQUEST FOR BIDS, dated January 4, 2018, to include all forms, attachments and Technical Specifications as cited in the REQUEST FOR BIDS.
  - b. All Addendums to the REQUEST FOR BIDS issued by the City of Elberton in accordance with item 5 below.
- 2.2 Complete sets of Bid Documents shall be used in preparing Bids. The OWNER assumes no responsibility for errors or misinterpretations resulting from using incomplete sets of Bid Documents.
- 2.3 The OWNER, in making Bid Documents available on the above terms, does so only to obtain Bids on Work and does not confer license or grant for any other use.
- 2.4 Any part of the Bid Documents may be modified by Addenda.
- 2.5 **Where forms are provided, THEY MUST BE USED WITHOUT SUBSTITUTION! Use of forms other than those provided by the City of Elberton shall constitute a non-responsive Bid and shall be rejected.**

NOTE: Bidder should submit one original and two copies of Bid Documents to include: Bid Form; Instructions to Bidders, Statement of Qualifications, Bidder's Affidavit, and Non-Collusion Affidavit.

### 3 PRE-BID MEETING:

A pre-bid meeting will not be held for this project.

### 4 EXAMINATION OF BID DOCUMENTS AND SITE:

- 4.1 Before submitting Bid, each Bidder shall: (a) examine the Bid Document Package thoroughly; (b) become familiar with local conditions affecting cost or Work progress or performance; (c) become familiar with federal, state, and local laws, ordinances, rules, and regulations affecting cost or Work progress or performance; (d) study and carefully correlate Bidder's observations with the Bid Document Package; and, (e) notify the Engineer concerning conflicts, errors, or discrepancies in Bid Document Package.

- 4.2 Potential bidders may obtain access to videos of the storm sewer interior by contacting Mr. Kevin Eavenson, Elberton's Public Works Director, by telephone at 706-213-3100 or by e-mail at [keavenson@cityofelberton.net](mailto:keavenson@cityofelberton.net).
- 4.3 Potential bidders wishing to tour the storm sewer interior should contact Mr. Eavenson at least 24 hours prior to the date of the intended visit to obtain permission to enter the site.

*Please note that any persons entering the storm sewer do so at their own risk. Neither the City nor its Representatives or Agents are liable for any loss of damage to any visitor or any person's property nor for any injury or death of any visitor whether such loss of damage to property of injury or death is as a result of the negligence of the City and/or its Representatives or Agents or not.*

- 4.4 Land where Work is to be performed, rights-of-way for access to site, and other lands designated for use by CONTRACTOR in performing Work are identified in General Conditions and Plans. The CONTRACTOR's operations must be confined inside such property, rights-of-way or easement lines as provided by the City.

**The CONTRACTOR shall not enter any easements except upon written direction from the OWNER.**

- 4.5 Bid submission will constitute **incontrovertible** representation that Bidder understands and has complied with requirements contained in this Article 4, and that Bidder has read and understood the Bid Document Package and hereby stipulates that the documents are sufficient in scope and detail to indicate and convey understanding for terms and conditions in order to perform Work.

5 ADDENDA AND INTERPRETATIONS:

- 5.1 All questions shall be directed to Jim Sunta of Precision Planning Inc., via phone at 770-267-8800, facsimile at 770-207-1564, or e-mail at 517js@ppi.us. Replies will be issued by Addenda mailed or delivered to parties recorded by the City of Elberton as having received Bid Document Packages. Questions received after 5:00 P.M. local time on Friday, February 2, 2018 time will not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 5.2 Addenda may be issued to modify Bid Document Package as deemed necessary by the City of Elberton.

6 CONTRACT TIME:

The Work shall be completed within forty-five (45) calendar days.

7 EXAMINATION OF BID DOCUMENTS:

Bidders are advised to carefully examine the Bid Documents for the proposed Work. The Bid Documents summarize the surface and underground structures likely to affect the prosecution of the Work insofar as they have been determined, but the information indicated is not guaranteed as being correct and complete. Bidders are expected to examine the Bid Documents and the location of the Work, verify all information with authorities concerned, and judge for themselves all the circumstances affecting the cost of the Work and the time required for its completion, and shall assume all patent and latent risks in connection therewith.

8 BID FORM:

8.1 Bid Form is included in the Bid Document package provided to each Bidder.

8.2 Bid Forms shall be completed and submitted in duplicate.

9 QUANTITIES OF WORK:

The quantities of Work as given for Unit Price Items in the Bid Form are approximate and are assumed solely for comparison of the bids. They are not guaranteed to be accurate statements or estimates of quantities of Work that are to be performed under the contract, and any departure therefrom will not be accepted as valid grounds for any claim for damages, for extension of time or for loss of profits; nor will any additional payments other than that bid or stipulated under the Unit Prices, be made regardless of the actual quantities required or ordered to complete the Work.

10 SUBMISSION OF BIDS:

10.1 Bids shall be submitted by no later than 2:00 P.M local time on February 8, 2018 at Elberton City Hall, 203 Elbert Street, Elberton, GA 30635 and shall be submitted in a sealed envelope with notation "PROJECT NAME, NAME OF BIDDER, DATE AND TIME OF OPENING " on face. If Bid is sent through mail or other delivery system, sealed envelope shall be enclosed in separate envelope with same notations as above on face.

10.2 Each Bid shall contain one original and two copies of the following documents in completed form (City forms must be used without substitution):

- a. **BID FORM - ONE MARKED ORIGINAL AND TWO COPIES**
- b. BIDDER'S AFFIDAVIT
- c. NON-COLLUSION AFFIDAVIT
- d. Corporate authority to execute Bid (required for any corporate officer other than president or vice-president)

- 10.3 More than one Bid received for same work from individual, firm, partnership, corporation, or association under same or different names will not be considered. Reasonable grounds for believing any Bidder is interested in more than one Bid for same work will cause OWNER to reject all Bids from Bidder. If OWNER believes collusion exists among Bidders, Bids from participants in collusion will not be considered.
- 10.4 Conditions, limitations, or provisions attached by the Bidder to the Bid Forms may cause its rejection. Bids containing Items not included in the form of Bid will be considered irregular.

11 MODIFICATION AND WITHDRAWAL OF BIDS:

- 11.1 Withdrawal Prior to Time for Receiving Bids - Bids may be modified or withdrawn by appropriate document duly executed (in manner Bid must be executed) and delivered to place where Bids are to be submitted at any time prior to deadline for submitting Bids. Bid Withdrawal will not prejudice Bidder's rights to submit new Bid prior to Bid Date and Time.
- 11.2 Withdrawal After Time for Receiving Bids - After period for receiving Bids has expired, no Bid may be withdrawn, modified, or explained except as provided for in paragraph 13 below.

12 OPENING OF BIDS:

Bids will be opened publicly at the time and place set forth in the ADVERTISEMENT FOR BID and read aloud.

13 BIDS TO REMAIN OPEN:

Bids shall remain open for acceptance by OWNER for sixty (60) calendar days after Bid opening. OWNER may, at its sole discretion, release any Bid prior to that date.

14 AWARD OF PRICE AGREEMENT/CONTRACT:

- 14.1 To extent permitted by applicable state and federal laws and regulations, OWNER reserves right to reject any and all Bids, to waive any and all informalities, and to disregard nonconforming, non-responsive, or conditional Bids. Bids may be considered irregular and subject to rejection if they show serious omission, unauthorized form alterations, use of unauthorized forms, unauthorized alternate bids, incomplete or unbalanced unit prices, or other irregularities. Discrepancies between words and figures will be resolved in favor of correct sum. Any mistake which is obviously a clerical one, such as an error in price extension, or in placement of decimal points, reversal of prices, FOB destination, FOB point of origin, etc., may be corrected by the City of Elberton after verification is made by the bidder. However, under no circumstances can unit prices be changed.

- 14.2 Contract will be awarded by OWNER pursuant to applicable law. Nothing contained herein shall place duty upon OWNER to reject bids or award bid based upon anything other than OWNER's sole discretion as described herein.
- 14.3 The City of Elberton may consider qualifications and experience for subcontractors, suppliers, persons, and organizations proposed for Work.
- 14.4 The City of Elberton may conduct investigations deemed necessary to assist in evaluating Bids and to establish responsibility, qualifications, and financial ability for Bidders, proposed Subcontractors, persons, and organizations to do Work. The OWNER reserves the right to reject Bid from any Bidder not passing evaluation.
- 14.5 The City of Elberton will award the project based on the best interest of the OWNER. Successful Bidder will be required to perform Work as Prime CONTRACTOR. CONTRACTOR shall submit a list of subcontractors to be used to complete the project.

15 REQUIRED PROJECT BONDS:

- 15.1 Successful bidder shall provide PERFORMANCE BOND (See Attached).
- 15.2 Successful bidder shall provide LABOR & MATERIAL PAYMENT BOND (See Attached).

16 PROJECT SCOPE:

16.1 Location:

The project includes an existing 40 ft long x 5 ft high x 6 ft wide stone box culvert crossing North McIntosh Street and a 54-inch diameter storm sewer running from the east end of the box culvert to an outfall approximately 250 linear feet (LF) due east. Starting at the catch basin, the storm sewer is comprised of approximately 80 LF of reinforced concrete pipe (RCP) followed by 170 LF of corrugated metal pipe (CMP).

The storm sewer is located within a utility easement on property owned by the Salvation Army at 262 North McIntosh Street in Elberton, Georgia (see Exhibit 1). Primary access to the site is via City right-of-way on North McIntosh Street. A secondary access option to the site from an adjacent property owned by the City of Elberton may be granted to the CONTRACTOR if requested and agreement is reached on conditions for restoration and cleanup of the property (e.g., repair/replacement of fencing, repair of pavement, etc.).

16.2 Purpose:

The storm sewer has been in place for many decades and is showing signs of weakening structural integrity. The most severe damage is within the 20-25 LF section of CMP nearest to the outfall where corrosion has eaten a sizeable portion of the pipe bottom. The corrosion in this section has opened up a gap of



about 6 to 8 inches. Corrosion of the pipe bottom is occurring in upstream portions of the CMP as well, but to a lesser extent than occurring at the outfall. There are a number of openings in the upper sections of the CMP as well - mostly at pipe joints, but also at areas apparently caused by protruding stones in the overburden.

The RCP section of the storm sewer is in generally good shape. Although there are gaps of 1-2 inches at every pipe joint, there is no exposure to the surrounding soil. The bottom third of the joint gaps are grouted to allow a smooth transition of flow across the joint.

The box culvert walls are in good shape, but the culvert bottom has some holes which require patching.

It is apparent that corrosion of the CMP will continue and that failure of the pipe will occur at some time in the future. Elberton has determined that the best option for providing drainage of storm water in this area is to rehabilitate the existing CMP by the installation of a protective liner now while the integrity of the pipe is still sufficient to serve as a substrate for the protective liner.

#### 16.3 Description of Work:

CONTRACTOR shall be responsible for rehabilitation of approximately 170 LF of 54-inch CMP storm sewer to include reinstatement of three lateral storm sewer connections as shown in Exhibits 2 and 3. CONTRACTOR shall also clean and repair 40 LF of 6-ft wide concrete floor in the box culvert crossing under North McIntosh Street. Work shall be conducted in accordance with the technical specifications in Appendix C and per the following items:

- a. Prior to mobilizing equipment, CONTRACTOR shall submit a written report for OWNER's review and approval outlining CONTRACTOR's proposed activity schedule. The report shall identify the major steps in carrying out the work to include the projected timeframe for completing preparatory activities such as television inspection and cleaning and a schedule showing the planned order in which the facilities will be rehabilitated. The report should identify the methods and planned routes for by-passing flows as well as proposed traffic control measures and coordination with homeowners connected to the project area's lines.
- b. Work shall include but is not limited to:
  1. Cleaning of CMP pipes to be rehabilitated and box culvert floor (see Item d, below).
  2. Removing and disposing of all internal solids and debris (see Item f, below).
  3. Preparation of existing pipe to be lined.
  4. Video inspection after cleaning.
  5. Pipe size verification.
  6. Bypass pumping.

7. Installation of lining material.
  8. Grouting of voids in box culvert floor.
  9. Post rehabilitation video.
  10. Maintenance of traffic during construction activities.
  11. Restoration and cleanup of project site.
  12. All other incidental work necessary for the rehabilitation of the pipe and box culvert floor as specified herein, and as shown on the Exhibits.
- c. Access to the interior of the storm sewer and culvert from the outfall (Sta 0+00) and through the two catch basin openings on North McIntosh Street are assumed to be adequate for CONTRACTOR's movement of personnel, equipment and materials necessary to perform the work. Therefore, excavation for entry and exit pits is not anticipated as part of this project. Excavation for reinstatement of existing services connected to the pipe to be rehabilitated is also not anticipated as part of this project.

**OWNER shall provide a backhoe, dump truck and personnel for any minor excavation if needed by CONTRACTOR in the course of performing the Work.**

- d. Cleaning Requirements:
- CMP Pipe: As required for preparation for lining in accordance with the specifications.
  - Box Culvert: Remove all loose stones, wood, metals and other coarse solids accumulated on culvert floor. Jet floor bottom as needed to remove dirt and loose substrate as needed.
  - RCP Pipe: Limited to removal of accumulations of existing coarse solids as well as waste materials from box culvert cleaning.
- e. Water used for cleaning of storm sewer pipes shall be potable water. Existing water system may be used for temporary water with OWNER's permission. OWNER shall be responsible for the cost of water used for cleaning and other uses as needed for completion of the work. All water used shall be metered by OWNER-supplied meter.
- f. CONTRACTOR shall coordinate with OWNER on scheduling providing equipment and personnel for collection and transport of waste materials. OWNER shall provide a dump truck and/or dumpster for collection of waste materials produced during CONTRACTOR's cleaning and preparation of the storm sewer piping and box culvert floor. OWNER will be responsible for transport of waste materials to landfill. CONTRACTOR shall be responsible for removal and/or disposal of any materials used in lining the storm sewer and repair of box culvert floor, unless otherwise approved by OWNER.

## **APPENDIX A**

### **BID DOCUMENT FORMS AND INSTRUCTIONS**

- Bid Pricing Schedule
- Bidder's Affidavit
- Form of Non-Collusion Affidavit
- Statement of Qualifications
- Contractor's Affidavit (E-Verify)
- Performance Bond
- Labor and Material Payment Bond

**Bid Pricing Schedule**

<b>Item #</b>	<b>Item Description</b>	<b>Unit</b>	<b>Est. Qty.</b>	<b>Unit Price</b>	<b>Total Price</b>
1	Mobilization and Demobilization	LS	1		
2	Underground Storm Sewer Cleaning	LS	1		
3	54-inch Diameter Storm Sewer Pipeline Rehabilitation	LF	170		
4	Box Culvert Floor Repair	LS	1		

**BID TOTAL, ITEMS 1 THRU 4, THE AMOUNT**

**OF \_\_\_\_\_.**

Person to contact regarding this proposal:

\_\_\_\_\_  
Name/Title Phone Email

\_\_\_\_\_  
Address

\_\_\_\_\_  
Authorized Signature Date

By signing and submitting a proposal, your firm acknowledges and agrees that it has read and understands the RFP documents and agrees to the Agreement Terms and Conditions as contained herein.

**Bidder's Affidavit**

(This Bidder's Affidavit is part of the Bid Documents)

BID DATE: Thursday, February 8, 2018

PROJECT NAME: **McINTOSH STREET STORM SEWER REHABILITATION**

STATE OF GEORGIA

CITY OF ELBERTON

\_\_\_\_\_  
(Name Printed)

being duly sworn, deposes and says that he resides at \_\_\_\_\_

\_\_\_\_\_  
that he is the

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Name of Bidder)

who signed the above Bid Form, that he was duly authorized to sign and that the Bid is the true offer of the Bidder, that the seal attached is the seal of the Bidder and that all the declarations and statements contained in the Bid are true to the best of his knowledge and belief.

\_\_\_\_\_  
(Affiant)

Subscribed and Sworn to before me this \_\_\_\_\_ Day of \_\_\_\_\_ 20\_\_\_\_

\_\_\_\_\_  
(Notary Public)

My Commission expires \_\_\_\_\_, 20\_\_\_\_

(SEAL)

**FORM OF NON-COLLUSION AFFIDAVIT**

(This Non-Collusion Affidavit is Part of the Bid Documents)

BID DATE: Thursday, February 8, 2018

PROJECT NAME: **McINTOSH STREET STORM SEWER REHABILITATION**

STATE OF GEORGIA

CITY OF ELBERTON

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being first duly sworn, deposes and says that he is

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(sole owner, partner, president, secretary, etc.)

the party making the forgoing Proposal or Bid; that such Bid is genuine and not collusive or sham; that said Bidder has not colluded, conspired, connived, or agreed, directly or indirectly, with any Bidder or person, to put in a sham Bid, or that such other person shall refrain from bidding, and has not in any manner, directly or indirectly sought by agreement or collusion, or communication or conference, with any person, to fix the Bid Price of affiant or any other Bidder, or to fix any overhead, profit or cost element of said Bid Price, or of that of any other Bidder, or to secure any advantage against the City of Elberton, or any other person interested in the proposed Contract; and all statements in said Proposal or Bid are true; and further, that such Bidder has not, directly or indirectly submitted this Bid, or the contents thereof, or divulged information or data relative thereto to any association or to any member or agent thereof.

---

(Affiant)

Subscribed and Sworn to before me this \_\_\_\_\_ Day of \_\_\_\_\_ 20\_\_

---

(Notary Public in and for)

---

(County)

My Commission expires \_\_\_\_\_, 20\_\_

(SEAL)

**Statement of Qualifications**

1. Company Name: \_\_\_\_\_  
Years in Business: \_\_\_\_\_ Contractor's License No: \_\_\_\_\_  
Contact Person: \_\_\_\_\_ Title: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
E-mail Address: \_\_\_\_\_

2. List 5 recent projects of similar complexity completed in the last two years, including owner, contract amount, scope, and reference/contact/phone number:

- i. \_\_\_\_\_  
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- ii. \_\_\_\_\_  
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- iii. \_\_\_\_\_  
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- iv. \_\_\_\_\_  
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- v. \_\_\_\_\_  
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\_\_\_\_\_





Contractor Affidavit under O.C.G.A. § 13-10-91(b)(1)  
(E-VERIFY)

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services on behalf of the CITY OF ELBERTON has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned contractor will continue to use the federal work authorization program throughout the contract period and the undersigned contractor will contract for the physical performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the contractor with the information required by O.C.G.A. § 13-10-91(b). Contractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

\_\_\_\_\_  
Federal Work Authorization User Identification Number

\_\_\_\_\_  
Date of Authorization

\_\_\_\_\_  
Name of Contractor

\_\_\_\_\_  
Name of Project

City of Elberton, Georgia

Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on \_\_\_\_\_, \_\_\_\_, 201\_\_ in \_\_\_\_\_(city), \_\_\_\_\_(state).

\_\_\_\_\_  
Signature of Authorized Officer or Agent

\_\_\_\_\_  
Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME

ON THIS THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 201\_\_.

\_\_\_\_\_  
NOTARY PUBLIC

My Commission Expires:  
  
\_\_\_\_\_

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS that \_\_\_\_\_  
\_\_\_\_\_ (Name & Address of Contractor) in the State of \_\_\_\_\_, hereinafter called the  
"Principal", and \_\_\_\_\_

\_\_\_\_\_  
(Name/Address of Surety), hereinafter called the "Surety", are held and firmly bound unto the  
City of Elberton, Georgia, hereinafter called the "OWNER", in the total aggregate penal sum of  
\_\_\_\_\_ DOLLARS

(\$\_\_\_\_\_) in lawful money of the United States, for the payment of which sum in  
lawful money of the United States well and truly to be made, we do hereby bind ourselves, our  
heirs, executors, administrators, successors, and assigns, jointly and severally firmly by these  
presents.

The condition of this obligation is such that whereas Principal has entered into a certain  
Contract with OWNER, dated as of the \_\_\_\_ day of \_\_\_\_\_, 2018, a copy of  
which is hereto attached and made a part hereof for the construction of "McIntosh Street Storm  
Sewer Rehabilitation".

NOW, THEREFORE, if the Principal shall in all respects comply with and perform all the terms  
and conditions of the Contract (which includes the Drawings, Specifications, and Contract  
Documents) and such alternations as may be made in said Contract as the documents therein  
provide for, during the original term thereof and any extensions thereof which may be granted  
by OWNER with or without notice to Surety, and during the one (1) year warranty period, and if  
Principal shall satisfy all claims and demands and shall indemnify and save harmless the  
OWNER against and from all costs, expenses, damages, injury, or conduct, want of care, skill,  
negligence or default, including compliance with performance guarantees and patent  
infringements by the Principal, then this obligation shall be void; otherwise, Principal and  
Surety jointly and severally agree to pay to OWNER any difference between the sum to which  
the Principal would be entitled on completion of the Contract and that which OWNER may be  
obliged to pay for the completion of the WORK by contract or otherwise, together with any  
damages, direct or indirect, or consequential, which OWNER may sustain on account of such  
work, or on account of the failure of the Principal to keep and execute all provisions of the  
Contract.

Principal and Surety further bind themselves, their heirs, executors, administrators, and assigns,  
jointly and severally, that if the Principal shall keep and perform its agreement to repair or  
replace defective work or equipment during the warranty period of one (1) year as provided,  
then this paragraph shall be void; but if default shall be made by Principal in the performance of  
its contract to so repair or replace said work, then this paragraph shall be in effect and OWNER  
shall have and recover from Principal and its Surety, damages for all defective conditions arising  
by reason of defective materials, work, or labor performed by or on the account of Principal and  
it is further understood and agreed that this obligation shall be a continuing one against the  
Principal and Surety hereon, and the successive recoveries may be had hereon for successive  
breaches until the full amount shall have been exhausted; and it is further understood that the  
obligation therein to maintain said Work shall continue throughout said maintenance period,  
and the same shall not be changed, diminished or in any manner affected from any cause  
during said time; and to fully save and hold OWNER harmless for any damages it may be  
caused to pay on account of injury to person, loss of life or damage to property.

And the Surety, for value received, hereby stipulates and agrees that the obligations of the Surety and this Bond shall in no way, be impaired or affected by any extension of time, modification, omission, addition, or change in or to the Contract, the WORK to be performed thereunder, or by any payment thereunder, before the time required therein, or by any waiver of any provision thereof, or by any assignment subletting or other transfer thereof, or of any part thereof, of any work to be performed, or of any moneys due to become due thereunder; and the said Surety does hereby waive notice of any and all such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts, and transfers, and hereby stipulates and agrees that executors, administrators, successors, assignees, subcontractors, and other transferee shall have the same effect as to said Surety as though done or omitted to be done by and in relation to the Principal.

It is expressly agreed that the Bond shall be deemed amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract not increasing the contract price more than 20 percent, so as to bind the Principal and the Surety to the full and faithful performance of the Contract as so amended. The term "Amendment", wherever used in this Bond, and whether referring to the Bond, or the Contract shall include any alteration, addition, extension, or modification of any character whatsoever.

No final settlement between the OWNER and the Principal shall abridge the right of the other beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, the Principal and Surety have executed this Bond by causing their respective names to be hereunto subscribed and their seals to be hereunto affixed by their duly authorized officers, on this the \_\_\_\_\_ day of \_\_\_\_\_, 2018.

Contractor (Principal)

\_\_\_\_\_

BY: \_\_\_\_\_

NAME: \_\_\_\_\_

(Please Print or Type)

TITLE: \_\_\_\_\_

(SEAL)

ATTEST: \_\_\_\_\_

NAME: \_\_\_\_\_

TITLE: \_\_\_\_\_

*\*NOTE: Date of Bond must not be prior to date of Contract. Attest for a corporation must be by the corporate secretary; for a partnership by another partner; for an individual by a Notary.*

LOCAL SURETY AGENT

SURETY

\_\_\_\_\_

\_\_\_\_\_

NAME: \_\_\_\_\_

BY: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

NAME: \_\_\_\_\_  
(Please Print or Type)

\_\_\_\_\_

TITLE: \_\_\_\_\_

\_\_\_\_\_

PHONE NO: \_\_\_\_\_

(SEAL)

WITNESS: \_\_\_\_\_

NAME: \_\_\_\_\_

TITLE: \_\_\_\_\_

NOTE: *Surety companies executing Bonds must appear on the Treasury Dept. most current list (Circular 570, as amended) and be authorized to transact business in the state where the project is located.*

LABOR AND MATERIAL PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that \_\_\_\_\_  
\_\_\_\_\_ (Name and Address of Contractor) in the State  
of \_\_\_\_\_ and \_\_\_\_\_

\_\_\_\_\_  
(Name and Address or Legal Title of Surety), hereinafter called the "Surety", are held and firmly  
bound unto the City of Elberton, P.O. Box 70, Elberton, GA 30635, hereinafter called the  
"OWNER", and unto all persons, firms, and corporations who or which may furnish labor, or  
who furnish materials to perform as described under the contract and to their successors and  
assigns in the total aggregate penal sum of \_\_\_\_\_

\_\_\_\_\_ DOLLARS  
(\$\_\_\_\_\_), in lawful money of the United States, for the payment of which sum  
well and truly to be made, we bind ourselves, or heirs, executors, administrators, successors,  
and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has by written agreement dated \_\_\_\_\_, 2018, entered into a  
contract with OWNER for "McIntosh Street Storm Sewer Rehabilitation", Elberton, Georgia  
which consists of:

**The Project consists of, but is not limited to the following major elements:**

Structural rehabilitation of approximately 170 linear feet of 54-inch diameter storm sewer and  
repair of box culvert floor.

The work shall be in accordance with the Request for Bids and Specifications prepared by  
Precision Planning, Inc., 802 East Spring Street, Monroe, Georgia 30655, which contract is by  
reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Principal shall  
promptly make payment to all claimants as hereinafter defined, for all labor and material used  
or reasonably required for use in the performance of the Contract, then this obligation shall be  
void; otherwise it shall remain in full force and effect, subject, however, to the following  
conditions:

1. A "Claimant" shall be defined herein as any subcontractor, person, party, partnership,  
corporation or other entity furnishing labor, services or materials used, or reasonably  
required for use, in the performance of the Construction Contract, without regard to  
whether such labor, services or materials were sold, leased or rented, and without  
regard to whether such Claimant is or is not in privity of contract with the Principal or  
any subcontractor performing work on the Project, including, but not limited to, the  
following labor, services, or materials: water, gas, power, light, heat, oil, gasoline,  
telephone service or rental of equipment directly applicable to the Construction Contract.
2. The above named Principal and Surety hereby jointly and severally agree with the  
OWNER that every claimant as herein defined, who has not been paid in full before the  
expiration of a period of ninety (90) days after the date on which the last of such  
claimant's work or labor was done or performed, or materials were furnished by such

claimant, may sue on this bond for the use of such claimant, prosecute the suit to final judgment for such sum or sums as may be justly due claimant, and have execution thereon. The OWNER shall not be liable for the payment of any costs or expenses of any such suit.

3. No suit or action shall be commenced hereunder by any claimant:
  - a. Unless claimant, other than one having a direct contract with the Principal, shall have given written notice to any two of the following: the Principal, the OWNER, or the Surety above named, within ninety (90) days after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the Principal, OWNER or Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the aforesaid project is located, save that such service need not be made by a public officer.
  - b. After the expiration of one (1) year following the date on which Principal ceased WORK on said Contract, it being understood, however, that if any limitation embodied in this bond is prohibited by any law controlling the construction hereof such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.
  - c. Other than in a state court of competent jurisdiction in and for the county or other political subdivision of the state in which the Project, or any part thereof, is situated, or in the United States District Court for the district in which the Project, or any part thereof, is situated, and not elsewhere.
4. In the event a Claimant files a lien against the property of the OWNER, and the Principal falls or refuses to satisfy or remove it promptly, the Surety shall satisfy or remove the lien promptly upon written notice from the OWNER, either by bond or as otherwise provided in the Construction Contract.
5. The Surety hereby waives notice of any and all modifications, omissions, additions, changes, alterations, extensions of time, changes in payment terms, and any other amendments in or about the Construction Contract and agrees that the obligations undertaken by this Bond shall not be impaired in any manner by reason of any such modifications, omissions, additions, changes, alterations, extensions of time, changes in payment terms, and amendments.
6. The Surety hereby agrees that this Bond shall be deemed amended automatically and immediately, without formal or separate amendments hereto, upon any amendment or modification to the Construction Contract, so as to bind the Principal and Surety, jointly and severally, to the full payment of any Claimant under the Construction Contract, as amended or modified, provided only that the surety shall not be liable for more than the penal sum of the bond, as specified in the first paragraph hereof.

7. This Bond is made for the use and benefit of all persons, firms, and corporations who or which may furnish any materials or perform any labor for or on account of the construction to be performed or supplied under the Construction Contract, and any amendments thereto, and they and each of them may sue hereon.

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_, 2018.

PRINCIPAL:

\_\_\_\_\_

TITLE: \_\_\_\_\_

\_\_\_\_\_

(WITNESS)

(SEAL)

LOCAL SURETY AGENT:

SURETY:

\_\_\_\_\_

\_\_\_\_\_

NAME: \_\_\_\_\_

TITLE: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

\_\_\_\_\_

(WITNESS)

(SEAL)

\_\_\_\_\_

PHONE NO.: \_\_\_\_\_

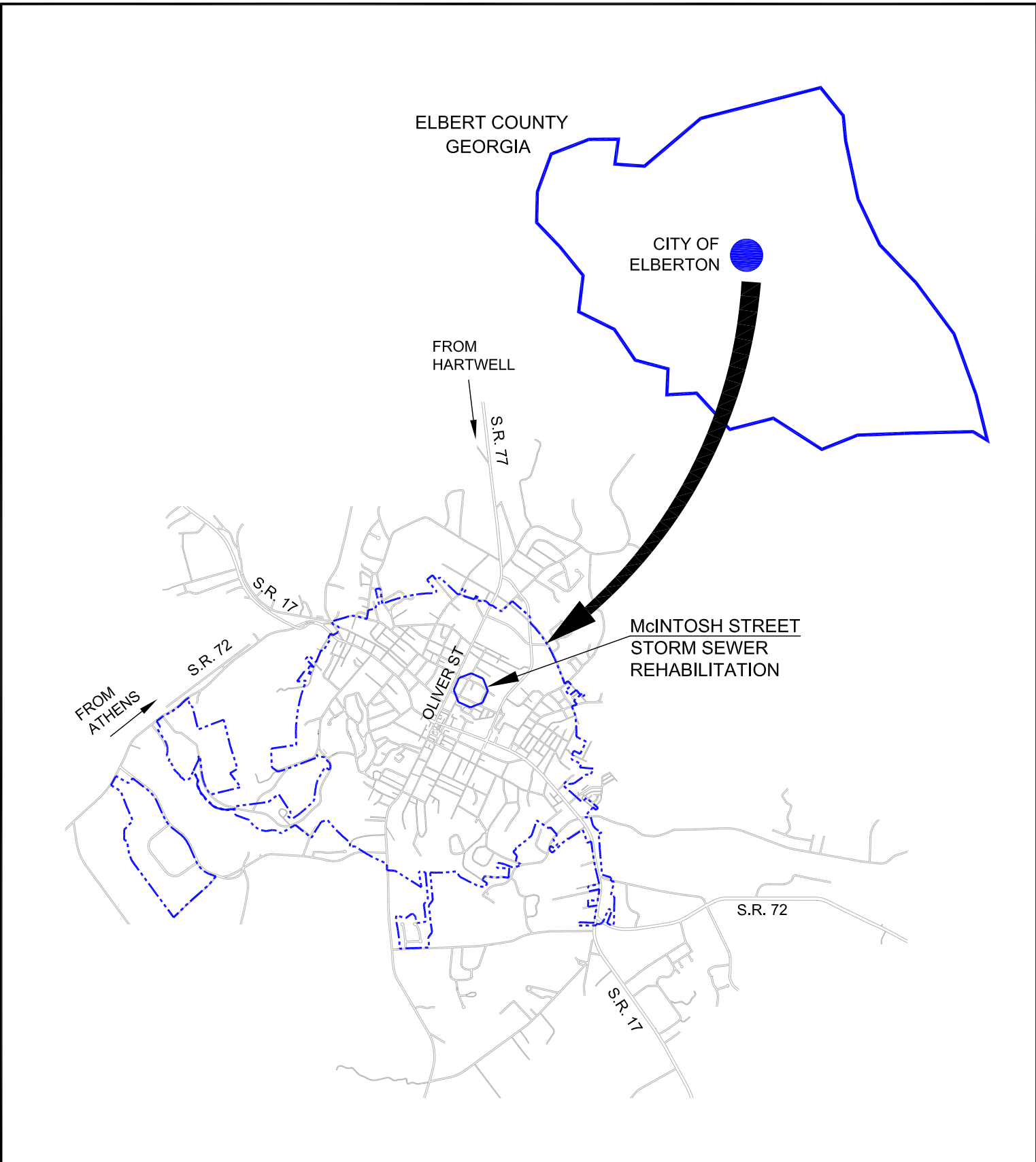
NOTE: *Surety companies executing Bonds must appear on the Treasury Department most current list (Circular 570, as amended) and be authorized to transact business in the state where the project is located.*

\*NOTE: *Date of Bond must not be prior to date of Contract. Attest for a corporation must be by the corporate secretary; for a partnership by another partner; for an individual by a Notary.*

**APPENDIX B**

**EXHIBITS**



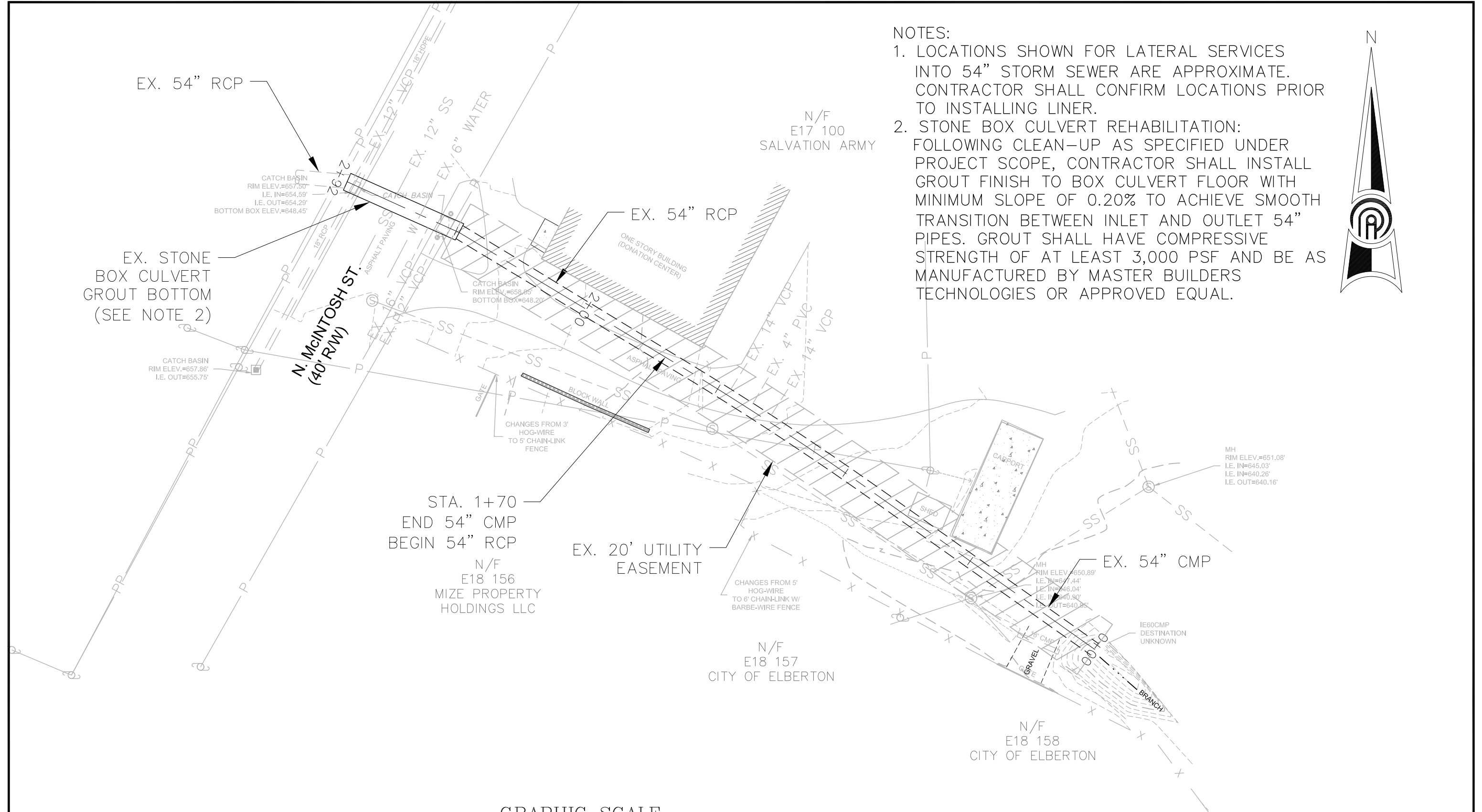



**PRECISION**  
Planning Inc.

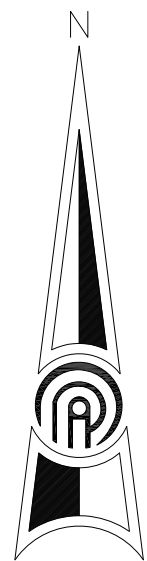


CITY OF ELBERTON  
McINTOSH STREET  
STORM SEWER REHABILITATION

PROJECT LOCATION	
JANUARY 2018	EXHIBIT 1



- NOTES:
1. LOCATIONS SHOWN FOR LATERAL SERVICES INTO 54" STORM SEWER ARE APPROXIMATE. CONTRACTOR SHALL CONFIRM LOCATIONS PRIOR TO INSTALLING LINER.
  2. STONE BOX CULVERT REHABILITATION: FOLLOWING CLEAN-UP AS SPECIFIED UNDER PROJECT SCOPE, CONTRACTOR SHALL INSTALL GROUT FINISH TO BOX CULVERT FLOOR WITH MINIMUM SLOPE OF 0.20% TO ACHIEVE SMOOTH TRANSITION BETWEEN INLET AND OUTLET 54" PIPES. GROUT SHALL HAVE COMPRESSIVE STRENGTH OF AT LEAST 3,000 PSF AND BE AS MANUFACTURED BY MASTER BUILDERS TECHNOLOGIES OR APPROVED EQUAL.

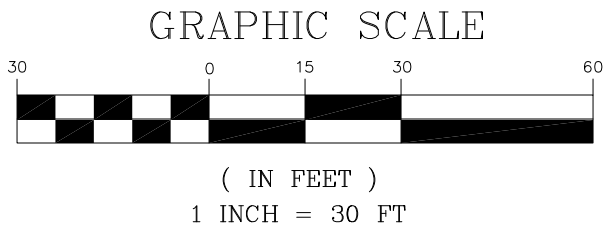




STA. 1+70  
 END 54" CMP  
 BEGIN 54" RCP  
 N/F  
 E18 156  
 MIZE PROPERTY  
 HOLDINGS LLC

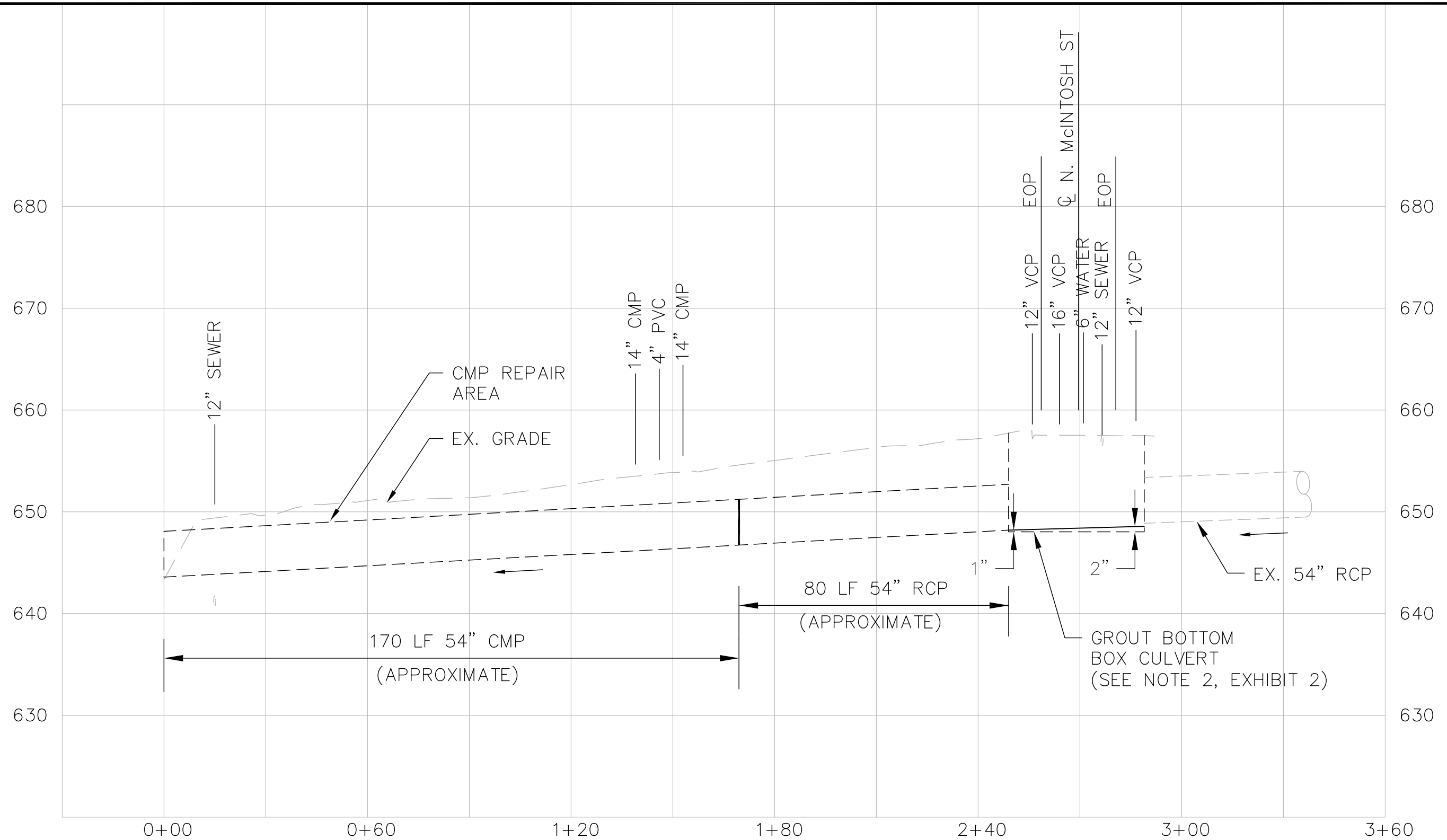
EX. 20' UTILITY  
 EASEMENT

N/F  
 E18 157  
 CITY OF ELBERTON

N/F  
 E18 158  
 CITY OF ELBERTON





 	<b>CITY OF ELBERTON</b> <b>McINTOSH STREET</b> <b>STORM SEWER REHABILITATION</b>		<b>PLAN SHEET</b>	
	<b>JANUARY 2018</b>	<b>EXHIBIT 2</b>		



**54" CMP/RCP STORM PROFILE**

SCALE: 1"=30' HOR; 1"=10' VERT

 	CITY OF ELBERTON McINTOSH STREET STORM SEWER REHABILITATION		PROFILE SHEET	
			JANUARY 2018	EXHIBIT 3

**APPENDIX C**

**TECHNICAL SPECIFICATIONS**

Measurement and Payment ..... 01025

Traffic Control ..... 01570

Cleaning of Underground Pipelines ..... 02760

Storm Sewer Flow Control ..... 02762

Spray-On Pipe Liner ..... 02765

## SECTION 01025

### MEASUREMENT AND PAYMENT

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

This Section describes the methods by which measurement will be made of the quantities for which payment will be made for the PROJECT.

##### 1.02 MEASUREMENT OF WORK

- A. WORK shall be measured by the OWNER or his representative, with assistance from the CONTRACTOR prior to preparation of a payment request by the CONTRACTOR.
- B. The CONTRACTOR shall give the OWNER a minimum of two days notice for making all required measurements.

##### 1.03 PROGRESS PAYMENTS

- A. Payments shall be based on the quantity of units installed.
- B. All items of WORK not specifically listed in the Bid Pricing Schedule shall be considered incidental to the construction, and the cost of all such work and material shall be included in the prices bid for various items listed.
- C. All items listed for measurement and payment shall include all machinery, plant, materials and labor, etc., to successfully and satisfactorily complete WORK specified.
- D. Payment: The CONTRACTOR will receive payment only for the items listed in the Bid Pricing Schedule of his contract, and no separate payments will be made for the work under any section of the REQUEST FOR BIDS DOCUMENTS except as provided for in the Bid Form. Where measurements are required to be made by the OWNER, for the payment of a pay item, the failure of the CONTRACTOR to give the adequate notification or failure of the CONTRACTOR to give the OWNER assistance for the measurement shall result in the forfeiture of payment for the work or item which was not measured.
- E. WORK to be paid for as a "Lump Sum" shall be measured only for completion of the WORK by the CONTRACTOR.

#### PART 2 PRODUCTS

##### 2.01 STORED MATERIALS

No payment shall be made for materials stored at the project site.

## PART 3 EXECUTION

### 3.1 MOBILIZATION AND DEMOBILIZATION

The basis of payment for this item shall be lump sum to include all activities and associated costs for transportation of CONTRACTOR's personnel, equipment and operating supplies to the site, establishment of any general facilities for the CONTRACTOR's operation at the site and premiums paid for performance and payment bonds. This item shall not include mobilization and demobilization of any specific item of work for which payment is provided elsewhere in the contract or for any materials incorporated into the permanent WORK.

### 3.2 UNDERGROUND STORM SEWER CLEANING

The basis of payment for this item shall be lump sum to include all labor, materials, equipment and associated costs for cleaning of pipe lines and other drainage structures as specified or shown in the REQUEST FOR BIDS DOCUMENTS.

### 3.3 STORM SEWER PIPELINE REHABILITATION

Payment for this item shall be per linear foot for each size pipe installed. Unit price will include all necessary bypass pumping, cleaning, pre- and post-video inspection and testing, rehabilitation work and materials, contractor clean-up and traffic control.

### 3.4 BOX CULVERT FLOOR REPAIR

The basis of payment for this item shall be lump sum to include all labor, materials, equipment and associated costs for repair of the box culvert floor as specified or shown in the REQUEST FOR BIDS DOCUMENTS.

END OF SECTION

## SECTION 01570

### TRAFFIC CONTROL

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. CONTRACTOR shall furnish all materials and labor for the installation and continuous maintenance of traffic control devices throughout the project.
- B. This item of work shall include furnishing, installing, maintaining, relocating and removing all traffic control devices used for the purpose of regulating, warning or directing traffic during the construction or maintenance of this project.
- C. Upon completion of work, warning devices are to be removed by the CONTRACTOR. If devices remain on site longer than ten (10) days after project completion, they shall be removed by the OWNER and become his property.

##### 1.02 SAFETY

- A. The governing factor in the execution and staging of work for this project is to provide the public with the safest possible travel conditions along the roadway through the construction zone. The CONTRACTOR shall arrange his operation to keep the closing of any lane of a roadway to an absolute minimum.
- B. No work shall be started on any phase of the project until all appropriate traffic control devices are in place and in operation.
- C. CONTRACTOR is to take all practical precautions to maintain traffic flow, and provide safety of workers and the general public.
- D. At the end of each workday, contractor is to clear the roadway of all dirt and debris and add additional safety devices to maintain safe travel lanes.
- E. When not in use, all traffic control devices shall be removed, placed or covered so as not to be visible to traffic.

##### 1.03 REFERENCES

- A. Manual for Uniform Traffic Control Devices (MUTCD) (latest edition).
- B. Georgia Department of Transportation (Ga. DOT) Standard Specifications Construction of Transportation Systems (latest edition), Section 150.
- C. Georgia Department of Transportation (Ga. DOT) Standard Construction Details (latest edition).

## PART 2 PRODUCTS

### 2.01 PRODUCTS

- A. Traffic Control Devices include: signs and their supports, signals, pavement markings, barricades with sand bags, channelizing devices, warning lights, arrowboards, flaggers, or any other device used for the purpose of regulating, warning or guiding traffic through the construction zone.
- B. All Traffic Control Devices used on this project shall conform to the plans, Ga. DOT Construction Details and Specifications, and MUTCD. No modifications will be allowed without prior written approval of the ENGINEER.
- C. Traffic Control Devices shall be in proper, acceptable condition when in use. Devices which are unclear, damaged, or not correctly positioned shall be promptly restored to fully operational condition.

## PART 3 EXECUTION

### 3.01 EXECUTION

- A. The CONTRACTOR shall be responsible for the proper location, installation, and arrangement of all traffic control devices. Special attention shall be given to advance warning signs during construction operations in order to keep lane assignment consistent with barricade placement at all times. The CONTRACTOR shall cover all Traffic Control Devices which are inconsistent with detour or lane assignment patterns during the transition from one construction stage to another.
- B. Construction signs referring to daytime lane closures during working hours shall be removed or covered during non-working hours.
- C. The CONTRACTOR shall ensure all Traffic Control Devices installed by him are operational 24 hours a day, including weekends and holidays. Provide additional inspections at regular intervals.
- D. When traveling in lanes open to public traffic, the contractor's vehicles shall always move with and not against or across the flow of traffic. These vehicles shall enter or leave work areas in a manner which will not be hazardous to, or interfere with, traffic and shall not park or stop except within designated work areas. Personal vehicles shall not park within the right of way except in specific areas designated by the OWNER.
- E. Private driveways and parking areas shall be accessible at all times unless temporary closings are necessary for construction work and the CONTRACTOR has notified the affected individuals and has approval from them.



- F. If trenches are to remain open overnight, or for an extended period of time, CONTRACTOR is to provide heavy duty cover plates to allow vehicles access.
- G. Delays to the CONTRACTOR by complying with these requirements will be considered incidental to the item for traffic control and protection, and no additional compensation will be allowed.
- H. Where flaggers are required they are to be adequately trained and qualified for the job.
- I. Where the roadway or shoulder must be left in a disturbed condition overnight, provide barricades with flashers at intervals so that they are continuously visible from either direction.
- J. When working adjacent to or over travel lanes, the CONTRACTOR shall ensure that dust or other debris from his operation does not interfere with normal traffic operations of adjacent properties.
- K. CONTRACTOR shall take full responsibility for employees parking and make suitable arrangements for vehicles so that no roadway hazards occur and that trespassing on private property does not occur.

END OF SECTION

## SECTION 02760

### CLEANING OF UNDERGROUND PIPELINES

#### PART 1 GENERAL

##### 1.01 SCOPE

- A. Cleaning shall be done on all lines designated for rehabilitation and elsewhere as indicated in the REQUEST FOR BIDS.
- B. Remove foreign materials from lines and restore storm sewer to condition as required for proper installation of lining materials.
- C. Where conditions such as broken pipe and major blockages occur that prevent cleaning from being accomplished, CONTRACTOR shall notify OWNER.

#### PART 2 PRODUCTS

NOT USED.

#### PART 3 EXECUTION

##### 3.01 CLEANING EQUIPMENT

- A. High-Velocity Jet (Hydrocleaning) Equipment
  - 1. High-velocity sewer cleaning equipment shall be used for ease and safety of operation.
  - 2. Equipment shall have selection of two or more high-velocity nozzles. Nozzles shall be capable of producing a scouring action from 15 to 45 degrees in all size lines designated to be cleaned.
  - 3. Equipment shall include a high-velocity gun for washing and scouring manhole walls and floor. Gun shall be capable of producing flows from fine spray to solid stream.
  - 4. Equipment shall carry its own water tank, auxiliary engines, pumps, and hydraulically driven hose reel.

B. Mechanically Powered Equipment

1. Bucket machines shall be in pairs with sufficient power to perform work in an efficient manner.
2. Machines shall be belt operated or have an overload device.
3. Machines with direct drive that could cause damage to pipe will not be allowed.
4. Power rodding machine shall be either a sectional or continuous rod type capable of holding a minimum of 750 feet of rod. Rod shall be specifically heat-treated steel.
5. Machine shall be fully enclosed and have automatic safety clutch or relief valve.

3.02 CLEANING PRECAUTIONS

- A. During storm sewer cleaning operations, satisfactory precautions shall be taken in use of cleaning equipment.
- B. When additional water from fire hydrants is necessary to avoid delay in normal work procedures, water shall be conserved and not used unnecessarily.
- C. No fire hydrant shall be obstructed in case of fire in the area served by the hydrant.

3.03 STORM SEWER CLEANING

- A. Selection of equipment used shall be based on conditions of lines at time work commences.
- B. Equipment and methods selected shall be satisfactory to OWNER.
- C. Equipment shall be capable of removing dirt, grease, rocks, sand, and other materials and obstructions from storm sewer lines and other drainage structures.

3.04 ROOT REMOVAL

- A. Roots shall be removed in designated sections where root intrusion is a problem.
- B. Special attention shall be used during the cleaning operation to assure complete removal of roots from joints.
- C. Procedures may include use of mechanical equipment such as rodding machines, bucket machines and winches using root cutters and porcupines, and equipment such as high-velocity jet cleaners.

D. Chemical Root Treatment

1. May be used at option of CONTRACTOR to aid in removal of roots and manhole sections that have root intrusion may be treated with an approved herbicide.
2. Application of the herbicide to roots shall be done in accordance with manufacturer's recommendations and specifications in such a manner to preclude damage to surrounding vegetation.
3. Damaged vegetation so designated by OWNER, shall be replaced by CONTRACTOR at no additional cost to OWNER.
4. Safety precautions as recommended by manufacturer shall be adhered to concerning handling and application of herbicide.

3.05 MATERIAL REMOVAL

- A. Sludge, dirt, sand, rocks, grease, and other solid or semisolid material resulting from cleaning operation shall be removed at the downstream end of the storm sewer line or at the closest drainage structure as needed.
- B. Passing material from junction box section to junction box section, which could cause line stoppages, accumulations of sand in wet wells, or damage pumping equipment, shall not be permitted.

3.06 DISPOSAL OF MATERIAL

- A. Solids or semisolids resulting from cleaning operations shall be removed from site and disposed of at a site designated and approved by OWNER in accordance with the REQUEST FOR BIDS DOCUMENTS.
- B. Materials shall be removed from site no less often than at the end of each workday.
- C. Under NO circumstances shall CONTRACTOR be allowed to accumulate debris, etc., on site of work beyond the stated time, except in totally enclosed containers and as approved by OWNER.

3.07 FINAL ACCEPTANCE

- A. Acceptance of storm sewer line cleaning shall be made upon the successful completion of television inspection and shall be to satisfaction of OWNER.
- B. If television inspection shows the cleaning to be unsatisfactory, CONTRACTOR shall be required to reclean and reinspect sewer line at CONTRACTOR's expense until cleaning is shown to be satisfactory.

END OF SECTION

## SECTION 02761

### STORM SEWER FLOW CONTROL

#### PART 1 GENERAL

##### 1.01 SCOPE

This section describes procedures for controlling storm sewer flows in pipe sections or drainage structures being worked by plugging or blocking storm sewer lines and pumping and bypassing storm flows.

#### PART 2 PRODUCTS

NOT USED.

#### PART 3 EXECUTION

##### 3.01 PLUGGING OR BLOCKING

- A. Plugs or other blocking devices shall be inserted into the line upstream of section being worked.
- B. Plugs and blocks shall be designed so that all or any portion of storm flow can be released.
- C. After work has been completed, flow shall be restored to normal.

##### 3.02 PUMPING AND BYPASSING

- A. When pumping and bypassing is required, CONTRACTOR shall supply the pumps, conduits, and other equipment to divert storm flows around line sections or structures in which work is to be performed.
- B. Bypass system shall be of sufficient capacity to handle flows that may occur during a rainstorm.
- C. CONTRACTOR shall be responsible for furnishing necessary labor and supervision to set up and operate pumping and bypassing system.
- D. If pumping is required on a 24-hour basis, engines shall be equipped in a manner to keep noise to a minimum.

##### 3.03 FLOW CONTROL PRECAUTIONS

- A. When flow in sewer line is plugged, blocked or bypassed, sufficient precautions must be taken to protect the sewer lines from damage that might result from sewer surcharging.
- B. Precautions must be taken to insure that sewer flow control operations do not cause flooding or damage to public or private property being served by sewers involved.

END OF SECTION

SECTION 02765  
SPRAY-ON PIPE LINER

PART 1 GENERAL

1.01 SCOPE

Perform structural reconstruction of existing storm sewer lines using an approved structural geopolymer lining system by forming a new pipe within an existing structurally deteriorated pipe which has generally maintained its original shape. The geopolymer liner may be spin cast or hand sprayed.

1.02 RELATED WORK

- A. Section 02760 - Cleaning of Underground Pipelines
- B. Section 02761 - Storm Sewer Flow Control

1.03 REFERENCES

- A. American Society for Testing and Materials (ASTM)

This specification references ASTM standard specifications, which are made a part of hereof by such reference and shall be the latest edition and revision thereof.

- 1. ASTM C39/39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
  - 2. ASTM C293 - Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Center-Point Loading).
  - 3. ASTM C469 - Standard Test Method for Static Modulus of Elasticity and Poisson's Ratio of Concrete in Compression.
  - 4. ASTM C496/C496 - Standard Test Method for Splitting Tensile Strength of Cylindrical Concrete Specimens.
  - 5. ASTM C882 - Standard Test Method for Bond Strength of Epoxy-Resin Systems Used With Concrete by Slant Shear.
  - 6. ASTM F2414 - Practice for Sealing Sewer Manholes Using Chemical Grouting.
- B. ACI Certified Concrete Field Testing Technician, Level I.

## 1.04 INSTALLER QUALIFICATION REQUIREMENTS

The CONTRACTOR installing the geopolymer lining must have a minimum of 10,000 linear feet of installation history with the particular product installed at pipe diameters of at least 36" or greater. For projects involving pipes 54" or larger the CONTRACTOR must have a minimum of 10,000 linear feet of installation history with the particular product they are installing with diameters 54" or larger. The CONTRACTOR must have references dating back at least 3 years of installation history with the particular geopolymer they are installing.

## 1.05 SUBMITTALS

The CONTRACTOR shall submit the following information:

- A. Submit written verification from the manufacturer documenting authorization for the CONTRACTOR to install the lining.
- B. Submit detailed installation procedures.
- C. Submit, prior to use of the materials, a satisfactory written certification of compliance with the standards for all materials. The certification shall include third-party testing of the material for short term and long term physical properties.
- D. Submit the design calculations for the wall thickness.
- E. Submit plans and procedures used for the reconstruction/rehabilitation of the pipelines at the location of each insertion shaft.
- F. Submit the flow bypass plan. The plan shall include, but not be limited to, means of diversion, bypass pumping and fluming, and amount of flow being diverted at each location.
- G. Submit accreditation for the independent testing laboratory being used.
- H. Submit a flash drive/external hard drive with corresponding files that show both the before and after conditions, including the restored connections, Video Inspection.

## PART 2 PRODUCTS

### 2.01 MATERIALS

- A. The geopolymer lining material shall be a micro-fiber reinforced ultra-dense geopolymer. This material shall provide a high strength fiber reinforced mortar specifically designed for ease of mechanical pumping, spraying and spin casting. The geopolymer lining shall be GeoSpray as manufactured by Milliken Infrastructure Solutions, LLC or approved equivalent.

- B. The geopolymer liner material shall conform to the minimum requirements, as listed below:

<u>Physical Property</u>	<u>ASTM Reference</u>	<u>Requirement</u>
Compressive Strength	ASTM C39	8,000 psi @ 28 days
Flexural Strength	ASTM C293	1,300 psi @ 28 days
Modulus of Elasticity	ASTM C469	5,800,000 psi @ 28 days
Bond Strength	ASTM C882	1,700 psi @ 28 days
Maximum Particle Size	ASTM C33	2.38 mm (100% No. 8 Sieve)

- C. The geopolymer supplier must provide XRD (X-ray Diffraction) data showing that the preformulated mixture contains at least 70% pozzolanic material as chosen from a group of SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, Fe<sub>2</sub>O<sub>3</sub>, MgO.

## 2.02 LINING DESIGN CRITERIA

The thickness of the lining shall be calculated and designed based upon the following physical conditions:

- A. The pipeline shall be considered fully deteriorated.
- B. The pipeline shall be subjected to an earth load (specific weight of soil = 120 lb./ft<sup>3</sup>) with applicable live load (HS-20 or E-80 criteria) and a water table 5 feet below top of ground (unless otherwise specified).
- C. The factor of safety shall be at least 2.
- D. The soil modulus shall not exceed 700 psi.
- E. The minimum installed geopolymer liner thickness shall be:
 

Pipe Diameter < 54":	1.0"
Pipe Diameter ≥ 54"	1.5"

## 2.03 LINING DESIGN SUBMITTAL

The lining design submittal shall include the following items:

- A. The design calculations for the wall thickness. Design calculations and drawings substantiating the geopolymer liner system thickness shall be prepared under the direction of a Licensed Structural Engineer registered in the State of Georgia or a Licensed Structural Engineer registered in the State of manufacture (Engineer of Record), with experience in the design of storm pipes or storm pipe linings.
- B. Method to verify applied thickness during installation.
- C. Field measurement of cured liner thickness.



- D. Site specific health and safety plan.
- E. Plastic indicator tabs.
- F. The new liner test results to verify 28-day compressive strength in accordance with ASTM C39.

## PART 3 EXECUTION

### 3.01 PREPARATORY PROCEDURES

#### A. Safety

The CONTRACTOR shall carry out his operations in strict accordance with all OSHA and manufacturer's safety requirements. Particular attention is drawn to those safety requirements involving working with scaffolding and entering confined spaces.

#### B. Cleaning of Line

It shall be the responsibility of the CONTRACTOR to clean the pipelines and remove internal debris out of the pipelines. Jetting, rooting and mineral deposit removal (at the discretion of OWNER) are considered conventional methods of cleaning. In pipe segments of questionable structural integrity, CONTRACTOR shall reduce the pressure of the jet and shall not direct the jet onto the cracked pipe. CONTRACTOR shall dispose of all debris removed in accordance with local, state and federal regulations or as otherwise indicated in the REQUEST FOR BIDS.

#### C. Inspection of Line

Inspection of pipelines shall be performed by experienced personnel trained in locating breaks, obstacles and service connections by closed-circuit televisions. The interior of the pipeline shall be carefully inspected after cleaning & prior to lining to determine the location of any conditions that may prevent proper installation of lining into the pipelines, and it shall be noted so that these conditions can be corrected. A digital file and suitable log shall be kept for later reference.

#### D. Bypassing

All pumps and bypass lines shall have adequate capacity to convey the required flow. During execution of work, the CONTRACTOR shall be responsible for continuity of service to each facility connected to the pipeline. The existing pipe may flow full or under pressure at times. The CONTRACTOR shall familiarize himself with the flow conditions to be encountered at all locations. The CONTRACTOR is being made aware that operations and maintenance of the system will take priority over construction and work may be subject to disruptions. The sole compensation for any delays resulting from operation and maintenance of the pipe system shall be a time extension.

E. Line Obstructions

It shall be the responsibility of the CONTRACTOR to clear the line of obstructions such as solids, dropped joints, protruding service connections or collapsed pipes that will prevent the insertion of the liner. If inspection reveals an obstruction that cannot be removed by conventional pipelines cleaning equipment, or the pipelines has partially collapsed, then the CONTRACTOR shall make a point repair. If the point repair could not have been identified from the bidding documents, or pre-bid video, it shall be approved in writing by the OWNER prior to the commencement of the work and shall be considered as extra work.

F. Pipe Preparation

The CONTRACTOR shall control infiltration to the extent required to install the liner in accordance with all of the manufactures requirements. The materials used for infiltration control and repairs shall be submitted to the OWNER for approval. The CONTRACTOR is responsible for the repair of all holes or fractures visible in the pre-bid video. The holes shall be filled with non-shrink grout or mortar or polyurethane foam and covered with a 3/8 inch stainless steel plate. The plate shall be sealed with epoxy sealant.

### 3.02 INSTALLATION PROCEDURES

A. Mixing

Combine all of the packaged geopolymer liner dry mix with the specified amount of potable water while mixing until proper consistency is obtained, as described by the manufacturer. The mixer must be capable of regulating the amount of water added to the mix on a consistent basis. Mixing water temperatures must be determined before blending operations begin. The mixing water temperature must be recorded in the daily operation log at multiple times throughout the day during the installation process. If water temperatures exceed 80 degrees F, then the water should be chilled to 80 degrees F or lower. The ability to provide mixing water at a consistent temperature is a critical aspect of the mixing and installation process. Tempering of the material above the manufacturers published limits is not allowed. Continue to agitate the geopolymer liner material to prevent thickening beyond the desired fluidity. The working time shall be as per manufacturer's recommendations.

B. Application

1. The geopolymer liner may be spin cast or hand sprayed to the interior surface of the host pipe after it has been properly prepared and cleaned. The geopolymer lining material shall be applied to a damp surface. However, pools of water should be removed before the start of the application of the geopolymer lining material. The spin-cast nozzle shall be attached to an oscillating spray head to ensure equal coverage on each side of the corrugations in the CMP.

2. The geopolymer lining material delivery hose shall be coupled to a medium-velocity spray application nozzle. Pumping of the material shall commence and the material shall be atomized by the introduction of air at the nozzle, creating a medium-velocity spray pattern for material application.
3. Where the geopolymer liner meets other pipes/liners, the joints shall be flush with no gaps, providing a uniform surface.
4. The geopolymer liner shall not be applied when ambient and surface temperatures are expected to fall below 36 degrees F within 72 hours of placement, without written permission from the manufacturer. For applying mortar at temperatures below 36 degrees F, the material, water and substrate shall be warmed to above a temperature of 32 degrees F. If heating the substrate is required, the area shall be properly ventilated. The newly installed liner shall be protected from freezing.

C. Thickness Verification

1. Three (3) small plastic depth gauges (plastic indicator tabs) shall be attached as a ring around the inner surface of the pipes, one (1) at the crown, and one (1) at each spring line. The depth gauges shall show the thickness as designed or specified. The gauge rings shall be placed twenty (20) linear feet apart. The preset depth gauge guides shall be positioned just below the designed or specified finished geopolymer layer. The gauges will be left in place within the geopolymer layer. These measurements must be written down in a log book which will be submitted.
2. The CONTRACTOR shall be required to apply the approved designed liner thickness. Additional material thickness applied by the CONTRACTOR will be at the CONTRACTOR's own expense. No separate additional payment will be made for any extra material thickness applied above the approved designed liner thickness.

D. Curing - Follow the manufacturer's recommended cure schedule in curing of the geopolymer liner.

### 3.03 LATERAL CONNECTIONS

The CONTRACTOR shall be responsible for confirming all locations of service connections prior to installing the liner. There may be more connections than shown on the as-is plan. After the liner has been installed and inspected, the CONTRACTOR shall reconnect the existing active lateral connections. This shall be done without excavation, and in the case of non-man entry pipes, from the interior of the pipeline by means of a television camera and a cutting device that re-establishes connections to not less than 90 percent capacity. The service connection shall be finished flush with connecting pipe by polymer mortar (if necessary).

### 3.04 TESTING

- A. A minimum of four samples shall be obtained and formed into cylinders following ASTM C31 and tested in accordance with ASTM C39.
- B. The samples may be taken from the pump immediately before discharge into the hose or at the spin caster, if feasible.
- C. The samples must be undisturbed for a period of at least 24 hours before they can be transported to the independent testing laboratory.
- D. The test cylinders shall be required at the start of the project. From that point on, a set of samples shall be collected for every 25,000 pounds of material applied. A final sample set shall be collected on the last day of application.
- E. When requested by OWNER, the CONTRACTOR shall remove a test core from the installed liner pipe at the CONTRACTOR's expense, at established intervals. The CONTRACTOR shall mark the core sample with the date that the liner was installed, the date that the core was removed, and the location within the pipe segment. The CONTRACTOR shall provide it to the testing lab. When requested by the OWNER, the pipe liner sample shall be cored at three different clock positions, and the average thicknesses measured shall be taken as the actual thickness of the spin cast liner. If a sample fails the test, additional material shall be applied to meet the thickness requirements. The CONTRACTOR shall restore the liner.
- F. The CONTRACTOR shall be responsible for the preparation, documentation, labeling and storage of the test cylinders. Also the CONTRACTOR shall be responsible for deliver the test cylinders to the testing laboratory.

### 3.05 NON-CONFORMING WORK

If the thickness or the compressive strength or the compressive modulus of elasticity of the installed spin cast pipe lining is less than 90 percent of the specified values, the product is considered unacceptable. Submit a proposed method of repair or replacement for review and approval by the OWNER. Work required to remedy non-conforming work shall be at no additional cost.

### 3.06 VIDEO INSPECTION

- A. The liner shall be inspected by a closed-circuit television as well as visually. The liner shall be continuous over the entire length of installation. There shall be no infiltration of ground water visible through the liner. All lateral entrances should be accounted for and be unobstructed. The invert of the pipe or culvert shall be visible in the video.
- B. After the rehabilitation is completed, the CONTRACTOR will provide the District with a flash drive/external hard drive showing both the before and after conditions including the restored connections. The video shall be a minimum of 640x480 resolution at a data bit rate of 4.0 Mbps. The video shall be in .wmv format or approved equal.
- C. The stationing (STA) or MH labels shown in the plans shall be used in the inspection videos.

### 3.07 CLEAN-UP

- A. Upon acceptance of the installation work and testing, the CONTRACTOR shall restore the project area affected by the operations to a condition at least equal to that existing prior to the work.
- B. Excess materials and debris not incorporated into permanent installation shall be disposed of by CONTRACTOR or as otherwise indicated in the REQUEST FOR BIDS.

END OF SECTION